

DEPARTMENT OF ENERGY
Western Area Power Administration

Finding of No Significant Impact and Floodplain Statement of Findings
Beaver Creek-Hoyt-Erie 115-kV Transmission Line Upgrade
Morgan and Weld Counties, Colorado

Summary - The Western Area Power Administration (Western) proposes to upgrade approximately 78 miles of 115-kV transmission line between the Beaver Creek Substation, east of Brush, Colorado; the Hoyt Substation, west of Hoyt, Colorado; and the Erie Substation, near Brighton, Colorado. The line is proposed to be rebuilt as a double-circuit 230-kV transmission line. Of the 78 miles, approximately 70 are located on private lands and 2 miles are located on City of Brush and State of Colorado property. Western prepared an Environmental Assessment (EA) for the proposal. A number of environmental protection measures are included with the proposed action and alternatives to minimize potential adverse environmental effects.

Two routing alternatives are evaluated in the EA for portions of the Beaver Creek to Hoyt transmission line: 1) the Beaver Creek-Brush Prairie Ponds State Wildlife Area (SWA) Reroute; and 2) the Bijou Creek Crossing Reroute. In addition, the EA addresses the relocation of a portion of the Beaver Creek to Big Sandy transmission line. All three routing alternatives are located in Morgan County and pertain to portions of the Beaver Creek-Hoyt transmission line. These alternatives were developed by Western in response to landowner comments and suggestions on how to minimize impacts to land use and agricultural operations, as well as natural resources.

The proposed action was to rebuild the transmission line on the existing right-of-way (ROW) and to acquire additional ROW to accommodate the upgraded line. As a result of comments received during the scoping process and in subsequent conversations with landowners and agencies, Western identified alternative routes for two sections of the transmission line. Two routing alternatives are examined in the EA. One reroute would place the line on approximately 7 miles of new ROW. This alternative places the new line in an established utility corridor, reduces impacts to irrigated agriculture and other land uses, improves visual impacts, avoids wetlands, reduces the likelihood of impacts to waterfowl, avoids impacts to most recreational uses on the Brush Prairie Ponds SWA, and improves Western's capability to maintain the line. The second reroute (Bijou Creek Crossing alternative) was developed in cooperation with landowners who wanted to improve their ability to use center pivot irrigation and to provide for expansion of their use of their property. This reroute also reduces the number of turning structures in the line. Western adopts the alternative routes as part of the proposed constructed project.

The availability of the pre-approval draft of the EA entitled "Beaver Creek-Hoyt-Erie Transmission Line Rebuild Project Environmental Assessment (DOE/EA-1508)" was distributed

to Federal, State and local agencies, interested Native American Tribes (Tribes), and landowners on September 30, 2005. The end of the review period was November 6, 2005.

One comment was received on the pre-approval draft EA from a landowner adjacent to the existing easement. The commenter is the Executive Director of a not-for-profit sanctuary for exotic and native wildlife species which have been abandoned, abused, injured or confiscated by State or Federal wildlife agencies. The sanctuary contains large areas where the animals are allowed to roam. Some of these areas are located adjacent to the existing transmission line easement. The Executive Director expressed concerns that project construction activities would upset certain species of large cats. Western is working with the Executive Director to reduce disturbance to these animals.

Other comments received during the public review of the pre-approval draft EA were inquiries on project schedule, and land acquisition policies and practices not related to the content or adequacy of the EA.

Based on the information in the EA, Western has determined that the proposed transmission line rebuild project along the existing route and alternative routes would not result in significant environmental impacts, and the preparation of an environmental impact statement (EIS) will not be required. Mitigation measures adopted as part of the proposed project are contained in a Mitigation Action Plan and will be implemented by Western. The basis for this determination is described in this Finding of No Significant Impact (FONSI).

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Additional information and copies of the FONSI are available to all interested persons and the public from the person named above.

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Purpose and Need - The Beaver Creek-Hoyt-Erie 115-kV transmission line, constructed in 1952, is an original facility in the Colorado-Big Thompson Project. Although the line has operated reliably, its limited capacity impacts the rating of the constrained transmission path between southeastern Wyoming and northeastern Colorado (referred to as TOT3), of which it is a component. Due to its limited capacity, the existing transmission line reduces the capability of the path to carry its full designed load. Increasing the carrying capacity of the Beaver Creek-Hoyt-Erie transmission line will avoid further reduction of the path constraints. If no action is taken on the existing line, the circuit will overload to 130 percent of the line's present thermal capacity within 5 years. After another 5 years, the line will exceed the rated capacity by 145 percent. If the line is rebuilt as a single circuit 115-kV line, with larger conductor (795 kcmil ACSR), it is forecast to overload within 15 years, shorter than the expected life of the proposed 230-kV line.

Without the proposed project, the TOT3 transfer path would have to be reduced by up to 400 MW in order to avoid future projected overloads. Western's reduction would be 25 percent (100 MW). This scenario is not acceptable to Western as it would restrict the ability of Western to move Wyoming hydroelectric power to Colorado Federal firm electric service loads.

The proposed transmission line rebuild will utilize larger conductors (1272 kcmil ACSR), thus yielding greater capacity. The greater capacity of the 230-kV transmission line will help alleviate overloading problems already experienced on the line. The existing 115-kV transmission lines are also approaching the predicted useful life of the wood H-frame structures. Anticipated maintenance costs required to continue operating the existing transmission line will be deferred when the transmission line is rebuilt.

In summary, the proposed action will accomplish the following objectives:

- Increase the operating capacity of the Beaver Creek-Hoyt-Erie transmission line.
- Ensure that the electric system in the area will continue to operate within acceptable reliability criteria while accommodating future load growth.
- Allow Western to continue to serve its network customers in a reliable manner.
- Ensure that customers with existing 115-kV interconnections are served.
- Provide line-switching capability at the Morgan County Rural Electric Association's (MCREA) Adena Substation.
- Ensure that updated communication and control facilities are provided to reliably operate and control the transmission line.
- Ensure that the line can be operated at its full capacity without impacting other interconnected transmission lines in the southeastern Wyoming and northeastern Colorado.

- Increase Western's ability to serve Colorado Federal firm electric service loads with Wyoming hydroelectric power.

Project Description - The existing Beaver Creek-Hoyt transmission line is 32 miles long and crosses through Morgan County, Colorado. The Hoyt-Erie transmission line is 46 miles long and crosses portions of Morgan and Weld Counties, Colorado. Western proposes to upgrade the existing transmission lines by removing the existing 115-kV H-frame structures, conductors, and hardware, and installing a double circuit 230-kV transmission line on single-pole steel structures. New H-frame structures would also be installed at specific locations including, among others, four locations where the proposed 230-kV transmission line would pass under existing transmission lines owned by other utilities. Long term, the proposed action would result in a reduction in the number of structures compared to the existing 115-kV transmission line that would be removed. Western would widen the existing ROW as necessary to allow adequate electrical clearances. The proposed action entails the following:

Beaver Creek-Hoyt-Erie Transmission Line Rebuild (78.3 miles)

Approximately 78 miles of the existing Beaver Creek-Hoyt-Erie 115-kV transmission line would be dismantled. This would include the removal of 595 existing transmission structures, conductors and hardware.

- Approximately 400 double circuit 230-kV single pole steel structures would be installed from the Beaver Creek Substation to the Erie Substation. The new double-circuit single-pole steel structures would support the 230-kV circuits. One circuit would be operated at 115 kV for the foreseeable future in order to retain interconnection with MCREA's Adena Substation; Tri-State Generation and Transmission Association, Inc.'s, Sand Creek Tap and Prospect Valley Substation; United Power, Inc.'s, Brighton Substation; and Western's Hoyt Substation.
- Approximately 18 new 230-kV steel H-frame structures would be installed at four transmission line crossings and 10 H-frame structures would be installed near the Beaver Creek Substation (8 structures) and Hoyt Substation (2 structures).
- The existing Beaver Creek-Hoyt-Erie ROW would be widened as necessary to meet National Electrical Safety Code standards and provide increased flexibility for maintenance activities for the proposed 230-kV transmission line. The existing ROW is typically 75 feet wide, and would be increased to widths ranging from 85 feet to 125 feet. ROW expansion requirements would vary depending on the width of the existing ROW, structure designs, and whether the existing ROW overlaps with adjacent transmission line ROWs. The ROW would be expanded to 125 feet in width at the four crossings where multiple H-frame structures would route the line under existing transmission lines.
- No major new access roads would be constructed. Existing public and private roads would be used to access the ROW. Within the ROW, Western would access the construction sites and structure sites via existing roads or minor new roads, and with the use of overland construction vehicles. Some grading within the ROW may be required to reach new structure sites, stringing sites, or other construction areas.

- Two sections of the existing Beaver Creek to Hoyt transmission line would be rerouted as described in the EA.
- One section of the existing Beaver Creek to Big Sandy transmission line would be rerouted as described in the EA to place it adjacent to the rerouted section of the Beaver Creek-Hoyt transmission line. Transmission line structures identified for this segment will not include single-pole steel structures as described in the EA, but will include smaller H-frame structures similar to the structures currently in use. Impacts identified and described in the EA for the original proposal to place the rerouted section of the Beaver Creek to Big Sandy line on single-pole steel structures would be similar or reduced by the use of the smaller H-frame structures.

Beaver Creek Substation, Erie Substation, and Hoyt Substation Expansions and Adena Substation Modifications

To accommodate the operation of the proposed double-circuit 230-kV transmission line, the Beaver Creek and Erie Substations would be expanded to accommodate new electrical equipment such as transformers and breakers. Line sectionalizing switches would be installed at the existing Adena Substation.

- The Beaver Creek Substation would be expanded to the east of the existing substation. The existing 5.3 acres would be enlarged to approximately 9 to 10 acres. A potential disturbance area of 31.2 acres is evaluated in this EA.
- The Erie Substation would be expanded from its existing 1.5 acre substation size to approximately 5 acres. The substation expansion would occur to the east and/or north of the existing facility. This EA evaluates a potential disturbance area of approximately 9.5 acres.

The timeframe for expansion or additions in the vicinity of the Hoyt Substation have not been determined. The existing Hoyt Substation is located in a floodplain. Any future 230-kV additions are likely to be constructed outside the floodplain. Modifications to the Hoyt Substation are not addressed in this EA due to these uncertainties and would be subject to NEPA compliance in the future.

The Public Process - Public and regulatory agency involvement is important for analyzing the proposed transmission line upgrade and ensuring that relevant environmental impacts are evaluated. During the early stages of the project planning, Western notified stakeholders of the project and solicited information on their concerns in a scoping letter dated October 22, 2004. Stakeholders contacted included local and State government agencies, landowners along the existing ROW, and Tribes with historical ties to the area. Western met with the Colorado Division of Wildlife (CDOW), the City of Brush Administration and Utilities, and the Morgan County Water Quality District to discuss specific issues. One project update letter was sent to local government officials in June 2005.

Nearly every landowner was personally contacted about the project. Landowners who requested meetings with Western were accommodated. Western also met with landowners along the alternative reroutes.

Additional consultation with Tribes occurred through written correspondence. The correspondence with Tribes helps Western meet the requirements for consultation under agency policy and as required by Executive Orders and Regulations. Much of the correspondence dealt with survey results and recommendations for management of historical properties that are eligible for the National Register of Historic Places (NRHP).

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Alternatives - Western considered several replacement options for the Beaver Creek-Hoyt-Erie transmission line. Alternatives considered and eliminated from further study would not meet Western’s purpose and need for the project, or reduce potential adverse impacts. The 230-kV voltage was identified as the best solution based on electrical systems studies. Without the proposed rebuild and upgrade project, the TOT3 transfer path between southeastern Wyoming and northeastern Colorado would have to be reduced by up to 400 MW in order to avoid future overloads. The greater capacity of the 230-kV transmission line (with larger conductors-1272 ACSR) will help alleviate overloading problems that would result from the continued operation of 115-kV transmission line.

Alternatives considered and eliminated from further study included reconductoring the existing 115-kV line, constructing a new 115-kV line on wood H-frame or light duty steel H-frame structures, and constructing a new 115/230-kV line on lattice steel structures. The 115 kV only alternatives would not prevent a decrease in the TOT3 total transfer capacity. The lattice steel structure alternative was eliminated because the larger structure footprint would likely increase impacts to both natural resources and agricultural lands as compared to single pole steel structures. Visual impacts would also be greater with the lattice structures.

Environmental Impacts - Summary of Findings - The EA evaluates the short-term and long-term impacts that may result from the construction and operation of the proposed action and alternatives. Impacts are assessed on a resource by resource basis, and include the project area that may be affected either directly or indirectly by the proposed project. All impacts have been determined to be less than significant with implementation of Western’s standard practices and project-specific mitigation measures. The results of the resource evaluations are compared in Table S-1 of the EA for the proposed action and alternatives. The following is a summary of the findings for the proposed action and routing alternatives:

Air Quality - Construction along the existing alignment and routing alternatives would have localized, short-term direct effects on air quality. Impacts would primarily be temporary and periodic emissions from construction and maintenance vehicles, and fugitive dust generated by construction activity. The project would have no effect on climate. The project and alternatives

would not cause, nor contribute to a violation of Federal or State standards. The project and routing alternatives would be in compliance with National Ambient Air Quality Standards and the Colorado State Implementation Plan. There are no Federal or State permitting requirements for this source type. There are no notable differences in air quality impacts between the proposed action and routing alternatives. The no-action alternative would also continue to have periodic and temporary impacts on air quality, as maintenance of the existing lines would increase over time.

Geology and Soils - There are no known geologic hazards (i.e., areas prone to earthquake, landslide, rockfall, or subsidence) within the project area. No active faults, inferred active faults, or geologic hazards are documented in the project area. The project area contains a number of facilities related to oil and gas production and coal resources. The project would not impact these resources, however, as it would be located along existing and expanded transmission line ROWs and at substation expansion sites.

Construction along the existing alignment and routing alternatives would mainly result in short-term soil disturbances at localized areas within Western's ROW. Short-term impacts on soils would result where project construction activities cause the loss of vegetation cover at structure sites, stringing sites, and where Western's existing access roads are improved or short spur roads to new structure sites require grading. Installation of the new steel structures would require excavations for holes up to 30 feet deep, depending on soil and geologic conditions. Soil disturbances would also occur at the substation expansion sites. Disturbed soils would be spread around the proposed facilities in a manner to facilitate revegetation. Short-term disturbances for construction are estimated to include 198.7 acres for the proposed transmission line rebuild and less than the 40.7 acres at substation sites. Long-term soil losses are estimated to be less than 2 acres for all transmission structure sites, and approximately 15 acres for the Beaver Creek and Erie Substation expansions.

Impacts to soils would be considered significant if the project or alternatives caused a major acceleration of soil erosion which resulted in, or contributed to, violations of water quality or impacts to existing water uses. Within the project area, increased soil erosion has the greatest potential to occur in areas susceptible to wind erosion. Western would implement both standard practices and project specific measures to ensure that disturbed areas are stabilized (e.g., seeding, mulching, or other techniques) and indirect effects from soil erosion are minimized. Areas susceptible to wind erosion would be monitored to ensure successful stabilization of soils is achieved.

Impacts to soils from the alternatives would be similar to those along the existing alignment overall; however, the Brush Prairie Ponds SWA Reroute and Big Sandy Reroute Alternatives would cross slightly more areas susceptible to wind erosion.

Paleontology - The existing alignment and alternatives would cross geologic formations with known paleontological resource potential, including the Pierre Shale and Denver Formation. No resources have been documented along the existing alignment and alternatives. The likelihood of encountering resources during construction is considered low given topsoil and agricultural land use conditions. Western would avoid and minimize potential impacts to paleontological

resources during construction through data recovery procedures if fossil remains are uncovered during construction.

Surface Water Resources - The project area is within the South Platte River watershed and would have short-term impacts on water resources. The existing alignment crosses 22 stream channels and 26 irrigation ditches or canals. Surface water within the project area generally meets water quality standards for designated uses except for one stream (Beaver Creek), which exceeds state water quality standards for selenium. Surface water use is primarily for aquatic life and agriculture. The proposed project would have no direct impacts on surface waters and water quality since all surface waters would be spanned, and no surface water use is proposed. Standard construction measures, including erosion control measures, would also be implemented to reduce the potential for sedimentation and water quality impacts. National Pollutant Discharge Elimination System Permits would be obtained as necessary.

Groundwater - Impacts to groundwater could occur during construction of foundations for structures near the Brush Prairie Ponds Recharge Area. Seasonally saturated soils typically require installation of deeper foundations than soils that are not saturated. The existing alignment and alternatives cross the Beaver Creek Basin south of the City of Brush (Brush). The Brush municipal well fields are located south of Brush Prairie Ponds Recharge Area and south of the existing transmission line. The Beaver Creek alluvium supplies water to the Brush well fields, as well as the Fort Morgan Reservoir and Irrigation Company. The Brush Prairie Ponds SWA alternative route is the closest to Brush's water wells. Impacts to the groundwater could occur and would be potentially significant if construction of the project impacted the protective clay layer that lies approximately 40 to 60 feet below the surface. Direct impacts to the protective clay layer are considered unlikely since the proposed structures would require foundations from 10 to 30 feet deep. In order to ensure that impacts to groundwater resources does not occur, Western would conduct geological investigations at each proposed structure site within the Brush well field and/or Brush Prairie Ponds Recharge Area (structures within Sections 22 and 21 T3N, R56W and/or Sections 27 and 28, T3N, R56W). Borings would extend 5 feet beyond the depth of the structure foundations to determine if the clay layer would be encountered during project construction. Alternative structure designs would be used that would allow for shallower foundations in the unlikely event that the standard foundations would reach the clay layer. In the event that water is encountered during construction of foundations, Western would obtain a Permit for Construction Dewatering Wastewater Discharge.

Floodplains - The existing alignment crosses floodplains at 12 locations on the Beaver Creek-Hoyt-Erie transmission line ROW. Seven of the 12 floodplains would be spanned, thus, there would be no direct impact to these floodplains. The remaining floodplain crossings are too wide to be spanned. Since the spacing of the proposed structures would be greater than the spacing of the existing structures, actual numbers of structures located within floodplains would be reduced over the existing conditions. One structure would be required to span the Antelope Creek floodplain and two structures could be required in the Muddy Creek floodplain. The largest floodplains include Badger Creek, Beaver Creek, and the South Platte River, with an estimated five structures, four structures, and three structures to be installed respectively within each of these floodplains. Long-term disturbance would be limited to the footprint of the structures (approximately 50 square feet per structure). Western would cross floodplains in compliance

with Permit 12 (utilities) of the Army Corps of Engineers Nationwide Permit. Western would not propose to fill or dredge in floodplains. Western would follow Federal Emergency Management Agency (FEMA) approved floodplain construction requirements. Western would also require the construction contractor to implement spill control and response procedures to control and clean up accidental spills of fuels and oils.

The impacts of the alternatives would be the same or similar to construction along the existing alignment. The Brush Prairie Ponds SWA Reroute and Beaver Creek-Big Sandy Alternatives cross four floodplains compared to five floodplains for the existing alignment. The Brush Prairie Ponds SWA Reroute alternative would be located in the section to the north of the section containing the Brush municipal well field, but it would be closer than the existing line. Consequently, the reroute would have a greater potential conflict with the Brush municipal wells than the existing alignment. However, since Western would implement project mitigation measures to avoid construction of structure foundations that would impact the protective clay layer that lies over the well field aquifer, long-term impacts would be similar to those associated with constructing along the existing alignment.

The alternative routes would have similar potential impacts to floodplains as the existing alignment. The Brush Prairie Ponds SWA Reroute and Beaver Creek-Big Sandy Reroute would cross the Beaver Creek floodplain to the south of the existing transmission line and would require three structures to cross the floodplain compared to five structures for the present alignment. The Bijou Creek Crossing Reroute would require one intermediate structure to cross the floodplain, compared to no structures for the existing alignment.

In summary, all impacts are expected to be of short duration and less than significant for constructing along the existing alignment and the alternatives. There are no long-term impacts expected to surface water, floodplains, or groundwater from the existing or the alternative routes.

Vegetation and Wetlands - The proposed transmission line would result in the short-term disturbance of approximately 198.7 acres. The majority of disturbances (138.3 acres) would occur in agricultural land. Predominant vegetation types affected include agricultural lands, native prairie, and non-native grassland. The vast majority of area affected during construction would be reclaimed following construction. Less than 3 acres would be disturbed long-term within the ROWs. Impacts to vegetation and wetlands would be considered significant if the project resulted in the loss or substantial impact to a designated conservation area, the establishment of noxious weeds that reduce agricultural productivity, or wetland fill impacts of 0.5 acre or greater. The project area contains no designated conservation areas. Western would use standard construction practices and project measures to ensure the introduction and/or spread of invasive species or weeds are minimized to less than significant levels.

The current ROW would intersect or cross approximately 33 wetlands. Most are associated with stream channels, ephemeral drainages, or irrigation ditches. Potential direct impacts to wetlands would be avoided through structure placement that would allow spanning of all wetlands. Indirect impacts could result if increases in erosion and sedimentation affected wetlands across the Brush Prairie Ponds SWA where the existing ROW crosses nearly a mile of intermittent wetlands and aquatic habitat. These types of indirect impacts would be minimized through